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EXAMINER

LIU, XUE H

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,466	Applicant(s) BINDA ET AL.	
	Examiner XUE LIU	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Amendment to claims in the reply filed 5/21/09 is acknowledged. Currently, claims 1-12 and 16-21 are pending. Claims 1-6, 18 are withdrawn from further reconsideration. Claim 7 is currently amended. Claim 14 is cancelled.

Election/Restrictions

2. Applicant's traversal to the election/restriction requirement made in the previous office actions has been fully considered but it is not persuasive. Applicant points out that the supposed errors in the restriction requirement lies in that unity of invention was found in the corresponding EP application. However, even if lack of unity of invention is not indicated in the Search Report in the corresponding EP application, one cannot automatically assume that unity of invention is established since restriction requirement is a discretionary choice by the Examiner, governed by the rules. Furthermore, even if lack of unity of invention was found in the corresponding EP application, restriction of the claims in the national entry of the PCT application is not prohibited since restriction of the claims is not based solely on the finding of the Search Report.

Drawings

3. Objections to drawings in the previous office action are withdrawn in view of submission of the replacement drawing sheets.

Specification

4. Objections to the specification in the previous office action are withdrawn in view of amendment to the specification.

Claim Objections

5. Objections to the claims in the previous office action are withdrawn in view of amendment to the claims.

Claim Rejections - 35 USC § 112

6. Rejection to the claims in the previous office action under 35 USC § 112 are withdrawn in view of amendment to the claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7-13,15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vorenkamp et al. (WO 02/14050 A2) in view of Feinstein (US 2,796,033), Dresen et al. (US 5,975,879), Gordon et al. (US 5,256,365), Alesi (US 3,779,687) and Reil et al. (US 5,158,786).

9. Regarding claim 7, Vorenkamp et al. teach a plant 10 for manufacturing plastic fuel tanks comprising first and second twin-sheet thermoformed shells 58, 60, according to which first and second thermoformable plastic sheets 58, 60 are independently heated and moved along respective first and second parallelly arranged processing lines 32, 34, from a loading station 12a, 12b through at least one heating station 14a, 16a, 14b, 16b, towards at respective thermoforming station 24, 26 where the individual plastic sheets 58, 60 are thermoformed in a first and a second shaping mold 66, 68 into a first and second respective shell 58, 60 (see abstract, page 1, lines 4-

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6, page 2, lines 15-25, page 3, lines 18-30, page 4, lines 1-4 and 28-31, page 5, lines 13-21, page 10, lines 11-19 and 24-31, page 11, lines 3-12 and 27-31, page 12, lines 1-9 and 16-23, page 13, lines 19-24, page 15, lines 17-32, page 16, lines 1-17, page 17, lines 1-6 and 12-18, claim 21, and figs. 1-3). Vorenkamp et al. do not teach that the first and second shaping molds are side by side arranged with the open cavities of both molds facing upwards and a drive conformed and arranged to turn one mold upside down to superimpose to the other one and to cause welding of overlapped sealing areas of the thermoformed shells by compression of the overlapped sealing areas by the mold. However, Feinstein teaches first and second shaping molds 14, 15 are side by side arranged with the open cavities of both molds facing upwards, and a drive 11 conformed and arranges to turn one mold (15) upside down to superimpose to the other one (14) and to cause welding of overlapped sealing areas 20b, 21b of the thermoformed shells 20a, 21a by compression of the overlapped sealing areas 20b, 21b by the molds 14, 15 (see figs. 1, 1a, and 1b. col. 1, lines 68-72, col. 2, lines 1-4, 38-51, col. 3, lines 12-18). It would have been obvious to one of ordinary skill in the art to apply the teaching of Feinstein in Vorenkamp et al.'s system of producing fuel tanks since it eliminates the need to bring the mold half with cavity facing downward to the mold half with cavity facing upward and align the mold halves to fuse the thermoformed shells together. Vorenkamp et al. do not teach pneumatically actuatable gripper formed from an air suction frame configured for gripping on a side of the plastic sheets around their peripheral edges. However, Dresen et al. teach a pneumatic actuatable gripper 30, 66 for gripping on a side of the plastic sheets 43, 45 around their peripheral edges, comprised of a sheet clamping frame 66 movable along the processing line (see figs. 1-4, col. 2, lines 59-62, col. 3, lines 54-59). It would have been obvious to one of ordinary skill in the art to provide the

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pneumatic clamping system as taught by Dresen et al. in the invention of Vorenkamp et al. since pneumatic clamps can be operated remotely, provides consistent force, is fast and capable of simultaneous or sequence operation of multiple clamps compared to other clamping systems for releasably holding the plastic sheets. Vorenkamp et al. do not teach a vacuum sheet holding device for holding the heated plastic sheets, said vacuum sheet holding device being movable along the processing lines, and a vacuum control device including an adjustable vacuum source to control a vacuum degree in the vacuum chamber of the vacuum sheet holding device for supporting the heated plastic sheets in a substantially flat condition. However, Reil et al. teach a vacuum sheet holding device 7, 7a, 7b for the heated plastic sheets 8, the vacuum sheet holding device 7, 7a, 7b being movable along the processing lines, and a vacuum control device for the vacuum sheet holding device 7, 7a, 7b for supporting the heated plastic sheets 8 in a substantially flat condition (see abstract, figs. 3-8, col. 9, lines 39-47, col. 13, lines 26-29 and claim 1). It would have been obvious to one of ordinary skill in the art to provide the vacuum sheet holding device as taught by Reil et al. in the invention of Vorenkamp et al. since the vacuum sheet holding device would provide auxiliary support for the plastic sheets while they are being moved. Vorenkamp et al. do not teach a vacuum control device including an adjustable vacuum source to control a vacuum degree in the vacuum chamber of the vacuum sheet holding device. However, Gordon et al. teach a vacuum holding device 66 connected to an adjustable vacuum source (see abstract, fig. 10, col. 6, lines 21-34 and claim 1). It would have been obvious to one of ordinary skill in the art to provide the adjustable vacuum source as taught by Gordon et al. in the invention of Vorenkamp et al. since Gordon et al. teach that the vacuum level can be adjusted during moving of an object from one location to another location. Vorenkamp et al. do teach the

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vacuum sheet holding device includes a vacuum chamber. However, Alesi teaches a vacuum means comprising a vacuum chamber 110 for applying vacuum to draw heated plastic sheets into the desired final shape (see col. 5, ll. 12-18). It would have been obvious to one of ordinary skill in the art to provide the vacuum chamber as taught by Alesi in the invention of Vorenkamp et al. in order to provide vacuum to the vacuum sheet holding device. Vorenkamp et al. do not disclose a corresponding pneumatically gripping means frame movingly supported by control cylinders on each mold. However, Alesi teaches that the mold half 106 comprises magnetically gripping frame 96, 98 movingly supported by control cylinders 54 (see figs. 2-7, col. 3, ll. 45-49 and col. 4, lines 31-43). It would have been obvious to one of ordinary skill in the art to provide the teaching taught by Alesi in the invention of Vorenkamp et al. since this ensures precise placement of the plastic sheets in the mold.

Regarding claim 8, Vorenkamp et al. teach that the plant 10 for manufacturing plastic fuel tanks comprises a sheet preheating station 14A, 14B (see page 12, lines 1-20, page 15, lines 17-30, claims 21, 30, 34, and figs. 2-3).

Regarding claims 9 and 10, Vorenkamp et al. do not positively teach a centering station, however, it would have been obvious to one of ordinary skill in the art to provide a centering device for positioning the plastic sheets to facilitate gripping of the plastic sheets by the gripping device. It would also have been obvious to one of ordinary skill in the art to provide the sheet centering station upstream of the sheet preheating station, since this would allow the plastic sheets to be transferred by the gripping device from the centering station to the preheating station.

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Regarding claim 11, it has been generally been recognized that to shift location of parts when the operation of the device is not otherwise changed is within the level of ordinary skill in the art, *In re Japikse*, 86 USPQ 70; *In re Gazda*, 104 USPQ 400. Therefore, it would have been obvious to one of ordinary skill in the art to provide the centering station between the preheating station and the second heating station for the plastic sheets.

Regarding claim 12, Reil et al. teach that the vacuum sheet holding device 7, 7a, 7b comprises heating elements 6 for the plastic sheets 8 (see abstract, fig. 3, col. 10, lines 16-25, col. 12, lines 57-59 and claim 1).

Regarding claim 13, Gordon et al. teach that the vacuum sheet holding device 66 is connected to the adjustable vacuum source (see abstract, fig. 10, col. 6, lines 21-34 and claim 1).

Regarding claim 15, Gordon et al. teach that the vacuum sheet holding device 66 is in the form of a pneumatically actuable suction bell (see abstract, fig. 10, col. 4, lines 57-62, col. 6, lines 21-34 and claim 1).

Regarding claims 16 and 17, Feinstein teaches a mold cooling station 33 downstream of the processing line, downstream from a thermoforming station (as shown in the right hand-side of fig. 1), and an endless belt 17 for transferring the closed molds 14, 15 between the thermoforming station and the cooling station. Feinstein also teaches other means for moving the mold between the stations, such as the well-known automatic rotating table or the like (see figs. 1 and 1a, col. 2, lines 20-30 and 53-69, col. 3, lines 39-50). Feinstein is silent about providing a plurality of mold supporting surfaces on the rotary table. However, it would have been obvious to one of ordinary skill in the art to provide a plurality of mold supporting surfaces on the rotary table to withstand the weight of the mold. Although Feinstein does not teach that the mold

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cooling station is on one side of the processing line in a side aligned condition with the thermoforming station, it has generally been recognized that to shift location of parts when the operation of the device is not otherwise changed is within the level of ordinary skill in the art, *In re Japikse*, 86 USPQ 70; *In re Gazda*, 104 USPQ 400.

Regarding claim 19, Feinstein teaches a mold clamping cage 12, 13 reciprocable between a thermoforming station (as shown at the right-hand side of fig. 1) and the cooling station 33 (see figs. 1 and 1a, col. 2, lines 5-19).

Regarding claim 20, Feinstein teaches that the drive means 11 for upside down turning one mold 15 comprises a book press (see figs. 1-1b, col. 1, lines 68-72 to col. 2, lines 1-4).

Regarding claim 21, the limitation "mechanical means for gripping the edges of the heated plastic sheets invokes 35 USC 112 6th paragraph. The limitation is construed as a presser or its equivalent. Feinstein teaches that the mold 14, 15 comprises a pair of clamping frames 22, 23 for gripping the edges 20b, 21b of the heated plastic sheets 20, 21 (see fig. 1, col. 2, lines 56-66).

Response to Arguments

10. Applicant's arguments filed 3/25/09 have been fully considered but they are not persuasive. In response to applicant's argument that Feinstein is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Feinstein teaches an apparatus for molding plastic sheets which are to be used as plastic packaging. While the claims recite a plant

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for manufacturing plastic fuel tanks, intended use has been continuously held not to be germane to determining the patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530. Therefore, it would have been obvious to one of ordinary skill in the art to combine two references which are both pertaining to an apparatus for thermoforming plastic shells. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Gordon et al. is cited for providing the adjustable vacuum source. It would have been obvious to one of ordinary skill in the art to combine Gordon et al. with any reference that teaches the use of a vacuum holding device.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XUE LIU whose telephone number is (571)270-5522. The examiner can normally be reached on Monday to Friday 9:30 - 6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip Tucker can be reached on (571)272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X. L./

Examiner, Art Unit 1791

/Philip C Tucker/

Supervisory Patent Examiner, Art Unit 1791

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